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REVIEWS OF NEW BOOKS.

Notes of a Tour in the Manufacturing Districts of Lancashire: in a series of Letters to His Grace the Archbishop of Dublin. By W. Cooke Taylor, LL.D., &c., author of the "Natural History of Society," &c. 12mo, pp. 299. London, Duncan and Malcolm.

The fearful interest and painful anxiety which are at this time attached to the manufacturing districts of Lancashire, and, indeed, to all the industrial population throughout the empire, connected with labour, commercial production, and enterprise, give a more than common degree of importance to the volume before us. It refers to subjects, no doubt, on which we are always unwilling to intrude our opinions, as they belong more to other than to literary questions; but when circumstances sway the Isle from its propriety, we must not fancy we have only duties to perform which are agreeable to ourselves, and shrink from the notice of matters in which the weal of our country is involved.

Dr. Taylor, from his preceding works, and from personal knowledge, we are bound to say, that we consider him to be a writer of perfectly honest purposes; desiring to do nothing inconsistent with what he deems to be truth, and earnestly to enforce upon the community those views which he is himself led to entertain. His feelings and his judgment may be wrong; but he cannot be the misstater of facts, or a wilful misleader in his arguments. If we find him in error, therefore, we must conclude either that he has not sufficiently examined both or all sides of a complicated question; that he has not fully comprehended all its bearings; or, that his mind may have been warped by the very means he has taken to acquire his information. In the present instance, the latter

appears to us to be the probable cause of his espousal, in the highest tone, of the utmost principles of the manufacturing, as against the agricultural classes, and the entire spirit of the anti-corn-law agitation. We are not going to discuss the ravels of this unnatural dispute, far less to presume on a decision regarding it; but we are bound to state our settled conviction, that the extreme on either hand is both false in itself and injurious to the general weal; and that if we were going to write a book about it, we should not confine our tour and observations to the manufacturing districts, but extend them equally over tracts occupied in field-husbandry and agriculture. We would not

forget all the while with kind and liberal mill-owners, cotton-spinners, bleachers, &c.; admiring their extensive concerns, and hearing nothing from them but glowing accounts of their immense establishments, their wonderful productiveness towards the national wealth, their care of their workmen (now foolishly called *operatives*), their exquisite and potent machinery, the necessity for increasing foreign trade, and the indispensability of their exertions (and adequate remuneration, in the shape of vast fortunes) for the prosperity of the country. We should think it no less necessary, for a just appreciation of the very grounds on which we wished to form our opinion, that we should visit the farmer and the squire, partake of the hos-

pitalities of the landowner, and listen to their tales of the vital existence of society being dependent upon the cultivation of the soil; upon manufacturers having no market like that of the home-consumer; upon the madness of relying on foreigners for our daily bread; upon the absurdity of imagining that the trifling difference between this or that tax on the import of corn can materially affect the price of provisions to the labourer; and, in short, upon not only the well-being, but the being of England, as a Sovereign State and Independent Power, resting on the protection of her agriculture, and the consequent raising of corn and provision within herself for the supply of her people.

Now, as Dr. Taylor has not done this, his work lies under the disapprobation of being gathered all from one side and *ex parte*; whilst his views as affects the other side are merely theoretical, on uninvestigated data. *Quantum velat*, then, we come to an impartial report upon, not a review of, his Notes. A review would require as much space as the volume itself—a report need only touch on a few specimens of the writer's advocacy of the manufacturing cause, and hostility to the corn-laws.

"In going over so much ground" (he says candidly in his preface), "in a short space of time, it is probable that I may have sometimes adopted hasty conclusions; but of this my readers will be able to judge, as I have set before them the reasons and evidence on which my inferences were founded. My sole anxiety was to tell the truth, the whole truth, and nothing but the truth; and my dearest wish is that, on the various important questions connected with the manufacturing districts of the north of England, 'a true verdict' may be given, 'according to the evidence,' by the government and the country."

We have already given Dr. Taylor credit for this; and shall now proceed to illustrate the manner in which he has performed his task. Manchester, Bolton, Stockport, Ashton, are the heads of, and furnish the materials for, several letters; but the majority are dated from the beautiful and wealthy mansion of an eminent and much-respected manufacturer, Mr. Henry Ashworth, "the Oaks, near Bolton." Here our missionary was superbly entertained; and the intelligence of Mr. Ashworth, in truth an individual of very great information, and comprehensively acquainted with almost every local subject connected with his pursuits; thence extending his own particular views to the prodigious influence on trade and commerce of cotton-spinning on the largest scale—not to lose ourselves in a parenthesis, we repeat, that the intelligence of his liberal host may readily be supposed to be deeply diffused in the speculations of Dr. Taylor: and they come to this:

"I have endeavoured to vindicate a noble race of men, the operatives of Lancashire, from undeserved calumnies, and to excite sympathy for their unmerited sufferings. It was not my intention to have said one word about the remedy, but it was before me every where, as glaring and as obvious as the disease. Ask the operative why he has no food? He answers; the manufacturer will give him no employment.—Ask the manufacturer why he gives no

employment? He answers, the merchant will not purchase his goods.—Ask the merchant why he does not purchase the goods? He answers, the laws prohibit him from importing the means of payment.—There is no getting out of this cycle, unless people make up their minds to the annihilation of British manufactures and the extermination of the British manufacturing population. I have endeavoured to shew that the factory-system has effected great social and moral good; it has increased the value of property for every class of men existing in this country, and it has more especially enhanced the value of land. If it has not called into existence, it has called out, the faculties of as fine and noble a race of men as ever existed in any nation under heaven; and it is because I know the high moral worth of this race, that I hopefully view the issue of this present crisis; for I believe that there is a fund of virtue and intelligence in the country sufficient to bear us through any calamities that may be impending."

Amen. Heaven grant it may be so! But are the premises true? Do not the merchants purchase manufactured goods? What say the Custom-house returns of our exports? They contradict the fact. Still it is a mighty evil that any considerable number of a people should, from any cause or causes, be unable to live, and to live comfortably, on the fruit of their toils. Starving men and families cannot wait for better times, whatever rulers, over their luxuries, may preach. The cold and the hungry are bad reasoners on expectancies; but where can a sufficient remedy be found to remove all the ills arising, not from one source, but a multitude of sources? The visionary panacea of a repeal of the corn-laws is but a factious outcry. Would such a measure induce Germany, and France, and Belgium, and America, to cease from encouraging their own home manufactures—which have grown, and are growing, with peace? Would it stop the increase of our own population, that helps to glut the market with labour-competition? Would it restore the character of our manufactures, where they have been depreciated by an opposite competition, tending to the produce of inferior articles?—But we are straying into forbidden regions, where even a few loose thoughts from us are out of place. To return to our author. At Burnley, we are told, on the authority of "a very intelligent manufacturer," that he "dwelt very strongly on the moral results of the crisis, which he described as far more alarming than its physical consequences; marriages had nearly ceased; while young persons, from having no work, were thrown together in dangerous circumstances, their passions stimulated by anger, and their powers of restraint destroyed by desperation. Revenge, 'the wild justice of the hopeless,' was preached by itinerant incendiaries; but, while 'the shadow of a chance' remained, he did not believe that the people would have recourse to violence. 'If, however,' he continued, 'they once get it into their heads that no remedy is to be expected, there will be no safety in Burnley for any man with a decent coat to his back.' From the conversations which I subsequently had with several of the

unemployed operatives in this district, I am firmly persuaded that my informant did not exaggerate. The people in this part of Lancashire are a rough, obstinate, and self-willed race, just the class of men that would be described in cant phrase as 'ugly customers.' They have given some very unpleasant proofs of their determination to have their own way in their opposition to the introduction of the police: they have more than once formed plans for provoking a contest with that force; and it was only by the exercise of the most extraordinary forbearance on the part of the police that fatal consequences were averted. But they are still a noble race of men."

Here are the sentiments derived from another aged manufacturing sage:—

"Labour is the operative's capital, but it is destroyed when it is not used: every hour of idleness subtracts the value of an hour of industry from the stock of the nation's wealth; and though the loss immediately and directly falls only upon the labourer, yet by no very remote consequences it produces a sensible effect on the entire community. There are people who seem to expect that the simple result will be a decrease in the rate of wages, and a diminution in the comforts of the operatives. This pernicious error arises from what is a very common, and at the same time a very absurd notion, that labour is dearer in England than elsewhere. Measuring labour by quantity and quality, instead of by time, and measuring the value of wages by the amount of necessities and comforts which they will purchase, we unhesitatingly assert, that labour is at this moment, and has been for at least the last ten years, cheaper in England than in any other country on the face of the earth. If it had not been so, we should have been bankrupts long ago. The proof is easy: the number of persons living without work, on rent, pensions, annuities, government-pay, interest of money, &c., bears a much greater proportion to the whole amount of population in England than in any other country: it is very clear that those who do not work must be supported by those who do,—but for the bees the drones would starve; and therefore the amount taken for the support of the idle from the profits of the industrious being here greatest, it is self-evident that the remainder left to remunerate industry must in this country be least."

A greater amount of fallacy could hardly be penned within the same compass of language: but we must give a sample of more genuine outbreak. Speaking of questions which excite the populace in this part of the world, and especially in a sweetly situated village in South Lancashire, Dr. T. says:—

"Let no one suppose that such questions suggest themselves only to a single mind. They are present to the minds of thousands, whose perplexity in discovering a satisfactory answer may lead to their adopting solutions rife with fearful consequences. There is yet time to avert the calamities which the state of things before me is calculated to produce. But if the remedial measures be too long delayed,—if the opportunity—the golden opportunity—offered by the rejection of the American tariff be neglected, the war between the 'Have-nots' and the 'Haves' must inevitably break out, and Coleridge's fearful eclogue of 'Fire, Famine, and Slaughter,' will become applicable to districts far more important and extensive than La Vendée. This alarm is suggested by no loud threat or angry declaration; I have heard little of such vapouring in Lancashire: it arises from hearing stern declamations made with

concentrated energy and bitter resoluteness, which found vent in few and brief sentences: these were pregnant with meaning, and meant far more than they said. I endeavoured to remonstrate with one of these men, and to shew him the perils of the course which he wished to see adopted: he cut me very short, and coolly informed me that 'the time for argument was gone past.' In this village I met with one of the most remarkable men I have ever seen, a perfect specimen of the 'abnormis sapiens': he never studied logic in his life, but I never saw any one who approached him in quickness of detecting a fallacy or exposing a sophism. His art of reasoning consisted in his powers of graphic and comic illustration. For instance, some conversation arose respecting war; he said, in a strong Lancashire dialect which I am quite unable to imitate, 'My father was killed at Waterloo;—there was a day appointed for thanksgiving in church;—a person comes to me and says—Will you not come to church and thank God for the great victory which he has bestowed upon your country? And, says I,—What should I thank God for? Is it for killing my father?'—He told us several anecdotes of his anti-corn-law debates, for he is a zealous agitator in the cause of repeal. On one occasion he met with a Methodist preacher who averred that the present suffering in the manufacturing districts was a visitation sent from God to punish the sins of the working classes, and proposed that they should hold a day of solemn fast and humiliation. The operative replied, that there would be no objection to it, provided it was such a fast as that described by the prophet Isaiah, quoting the passage: 'Is not this the fast that I have chosen? to loose the bands of wickedness, to undo the heavy burdens, and to let the oppressed go free, and that ye undo every yoke?' Is it not to deal thy bread to the hungry, and that thou bring the poor that are cast out to thy house? When thou seest the naked, that thou cover him, and that thou hide not thyself from thine own flesh?' 'Who are they,' continued this fine specimen of nature's orators, 'that hide themselves from their own flesh? Is it the poor? No! Those who have scarcely enough for themselves will share their bite and their sup with a brother in distress. If a man is in distress and comes here, which will he soonest go to, the door of a cottage or to one of the big houses? You know well where he would obtain the best reception. Mistress would run upstairs, that her delicate sense might not be offended by the nasty beggar, and in her bed-room 'hide herself from her own flesh';—if master did not set the dogs at him, he would whistle them to his heels, and in the cover 'hide himself from his own flesh.'—The great people in London, who know that we are starving for want of work and food, and that means for giving us both are in the country, which they withhold lest they might lose a farthing in the pound of their rents, they are the persons who 'hide themselves from their own flesh'; but it is odds if their own flesh will not find them out some days or other, with a vengeance. No, said I to the Methodist, if Providence wanted to punish the sinful in the land, Providence would have made a great mistake in coming to the working classes. I tell thee, man, that if I believed what thou sayest, I would turn Atheist: for if I thought that the Lord was the cause of all the misery I see around me, I would quit his service, and say he was not the Lord I took him for.' I do not attempt to report any more of the conversation of this remarkable man, but there was one sentiment to which he gave ut-

terance, in reference to the poor-laws, not merely as his own opinion, but as that of the class to which he belonged, worthy of being recorded, because during my tour I have met it a thousand times in a thousand shapes. It was this, that the distressed operative's condition is greatly aggravated, by his believing that he has a right to a better condition, inasmuch as he has taken a part in raising society to the condition which establishes a higher average of comfort than that to which he can attain. It is not to be supposed that the suffering operatives express themselves in these precise words; but a very slight analysis of their complaints will exhibit this sentiment imperfectly conceived, but still very influential in their thoughts. In a former letter I stated what I now repeat, that in my opinion the actual destitution of the agricultural labourer is greater than that of the manufacturing operative; but I am still more fully persuaded that the sufferings of the latter are infinitely the greater."

There is much to ponder on in this extract, but to which side or opinion the argument (profane enough in part) inclines, it is not in our power to determine. On the subject of juvenile labour, Dr. T. delivers a more clear and positive doctrine.

"Juvenile labour is a family question: it is easy for those who abandon their own domestic duties to whirl through the giddy rounds of dissipation, to forget that the poor have families. They can think of the child without including the consideration of the parent; for, in their own case, they can think of the parent without the child. But, in any question connected with the operative family, the parent and the child cannot be dissevered. Whatever is evil and wrong in the condition of the children has arisen from previous evil and wrong in the condition of the parents. Evil, indeed, is the necessity that children of tender years should be tasked beyond their strength to procure subsistence; but still more evil is the imposition of those burdens on industry, which require such inordinate labour for procuring a scanty supply of food. Wrong it is, that the parent should consign his boy or girl to cramping confinement, or else see them starve before his eyes; but still more wrong is the legal robbery that tears away half the fruits of his own toil, and throws upon the energies of his tender offspring to make good the deficiency. Charles V. went into mourning when the pope was imprisoned by his own soldiers, and offered public prayers for the pontiff's deliverance, which he could have effected in a moment by issuing an order. The imperial hypocrite has had a host of imitators; there is no man, not wilfully blind or hopelessly stupid, who does not know that juvenile labour is a necessary and inevitable result of the great and inordinate pressure on the general industry of the country. Is it not, then, the wildest insolence of hypocrisy to lament the result, and, at the same time, uphold the system by which it is produced? When such inconsistency is ostentatiously displayed, the only doubt is, whether it should be despised as folly, or detested as wickedness. Inspection by government-agents has been recently established; and though it is obviously a system open to objection, inasmuch as all legislative interference in the details of trade is bad in principle, it has on the whole worked well. Still there is room to fear that as the mills improve, the inspection may become vexatious; it is a very common error for persons in authority to suppose that they can regulate the processes of manufacture better than the manufacturers themselves, and no

where is this tendency to intermeddling legislation greater than in England. Hence there is reason to fear that inspectors may fall into the error of exacting literal obedience to arbitrary rules, even when exceptional cases arise where a breach of the rules would best carry out the principles for which a system of superintendence was instituted. Most people have heard the story of a factory-inspector, who, having found a boy hidden in a sack, recommended the government to introduce a clause into the act of parliament against the heinous crime of hiding children in sacks."

In point of fact, the author has so high an idea of manufacturers, that he is averse to their being interfered with or thwarted. That the worthy among them deserve much, as the reward of industry, ingenuity, and benevolence, we are most willing to allow; and, as a relief to this paper, we shall now picture such a merited reward, in the prosperity of Mr. Henry Ashworth, at his seat "The Oaks." Here our author being located writes in the pure sense of enjoyment.

"How a painter would have enjoyed the sight which broke upon my waking eyes this morning! To my right is one of the tributaries to the Irwell, winding through the depths of a richly wooded and precipitous valley, or rather ravine; the sun's rays, glinting from the waters, come like flashes through every opening in the foliage, warning me that I have remained a laggard without being able to plead fatigue as an excuse—it being now a settled maxim that nobody is to be tired from a journey by railway. Before me, at the extreme of the level on which I stand, and which I may describe as a promontory of table-land surrounded by valleys, is the Hall in the wood, memorable for having been the residence of Crompton, the inventor of the spinning-jenny, and to me scarcely less interesting as one of the most perfect specimens remaining of the domestic architecture of our Saxon ancestors, and of their descendants the Franklins or old country gentlemen of England, who never bowed their head to the Norman yoke, and who refused to adopt the fashions imported from the Continent. Beyond is the hill on which a great part of the busy town of Bolton is built. The intervening valley is studded with factories and print-works. Thank God, smoke is rising from the lofty chimneys of most of them! for I have not travelled thus far without learning, by many a painful illustration, that the absence of smoke from the factory-chimney indicates the quenching of the fire on many a domestic hearth, want of employment to many a willing labourer, and want of bread to many an honest family. The smoke too creates no nuisance here—the chimneys are too far apart; and it produces variations in the atmosphere and sky which, to me, at least, have a pleasing and picturesque effect. • • • Mr. Ashworth's garden is on the side of the factory remote from the house: it is rich in fruits, flowers, and vegetables, but it is absolutely unprotected; a child could scramble through the hedge, and in my schoolboy days I would have thought little of clearing the gate in a leap: the gate, however, is only secured by a latch, and could not therefore exclude an infant. Now this unprotected garden has never suffered the slightest injury or depredation. I know of less tempting gardens secured by high walls, ponderous gates, and a regular apparatus of bolts, locks, and bars, to which man-traps and spring-guns were found necessary as an additional protection."

Why, this paradise might satisfy a nobleman who had inherited it through a long line of an-

cestors; and rejoiced are we to see it may be attained by successful cotton-spinning. But then the question forces itself upon us, whence is the wealth of the rich manufacturers, the cotton-lords, as they are good-humouredly called, derived? Is it from the miserable, unemployed, ill-paid, and starving workmen, whom Dr. Taylor so forcibly and pathetically describes?

We will not argue. It strikes us as an extraordinary aspect in the present sad and threatening relation of things, that every outrage in the disturbed districts has been committed against mills, mines, and factories, and not one against farm-house or landowners' mansion! How is this reconcilable with the prevalence of a general hatred against the corn-law oppression? It is a bleak and grievous inquiry. Would to Heaven it were settled by measures of mercy and wisdom; and the labourer, found worthy of his hire, should in no corner of England be without the comforts of wholesome food and respectable clothing, the means of bringing up his children in the way they should be trained, and enjoying intervals of repose, during which he might beneficially turn his mind to the contemplation of that other and better world beyond the grave, "where the wicked cease from troubling, and the weary are at rest."

Life in the West: Back-Wood Leaves and Prairie Flowers; Rough Sketches on the Borders of the Picturesque, the Sublime, and Ridiculous. Extracts from the Note-Book of Morleigh in search of an Estate. 8vo, pp. 363. London, 1812. Saunders and Otley.

We have had, perhaps, as much about the Back Woods as the subject will well bear; and we do not find that the writer, mingling the facetious with the usual style of travelling observation, has added much to our stock of ideas. His volume is light and gossipping, and at the sea-side, or in country-quarters, during the ensuing two months, it will have sufficient attractions for the Take-up-and-Lay-down class of reading. With this recommendation, and a very few exemplary extracts, we shall dismiss it to its transitory fate. There is a celebrated poet at Toronto, Sir John Smith by name and title, who, among other admired pieces, has produced the following:—

"To the most celebrated Captain Marryat, &c. &c.

The most celebrated Captain Marryat
Of our day stands unrivall'd as the sun,
Whose great fame all should wish to arrive at,
And in his most transcendent course to run.
High on the pinnacle of honour and fame
Captain Marryat is now a soaring,
And great and exalted is his good name,
And most widely through the world it does ring.

Captain Marryat's fame shines most brilliantly,

Giving light to the whole universe wide,

And all will remember continually,

And will look up to him as their guide."

Another composition, by the same, is worthy of being better known on this side of the Atlantic.

"A Poem on the North-Eastern Boundary Question.

The long-disputed north-eastern boundary-line,
That has excited Britannia and America,
Now appears most hostile, and like war a sure sign,

For Britons will protect the claims of Britannia.

I would advise Brother Jonathan to be careful

Not to awaken the strong lion of England,

For the lion will act and behave most fearful,

And the lion will always maintain his bold stand.

Brother Jonathan will find that it will not do

For him with the lion to trifle and to play;

For the lion will sharply bite all that near him go,

And are so foolish and silly to go in his way.

Let Brother Jonathan let the lion alone,
For the strong, powerful, and the furious lion
Will make Brother Jonathan for his crime atone,
And Brother Jonathan the lion will ride upon!!!"

From the visitors'-book at the Falls of Niagara, the following may be quoted, as short and sweet.

"Where is the red man? where is the white man?
Where is the black man? all right—good night, man.
PETER PARLE."

"My! what an almighty plan for washing sheep!
L. HOOSIER, Miss."

In one of his desert-journeys, our traveller was sheltered for the night in the hut of an Irish settler; and says,—

"Having secured the horse in the stable, *sans* *cérémonie* we entered the log-house, and were assailed by a sturdy mastiff. The kitchen, parlour, and hall, into which we made our *entrée*, was much larger than I expected; we found two disastrous-looking Irishmen standing up bravely before a huge fire-place and roaring fire; between them hung, or was suspended, a quarter of beef, red and raw, which they were weighing after their own fashion; a very dirty and uncouth woman nursed an infant in the chimney-corner; two half-clad urchins peeped from behind her; three ragged boys occupied the other corner. And the weighing of the beef ended, and the dog turned out, with some difficulty, we were permitted to approach the fire; the men returned, as they said, to look after the horse; and presently we heard a noisy dispute about the beef. 'Twopence a pound—sooo!—twopence a pound for that red meat, is it?' 'Ay, and it's little enough for my labour (let alone the loss), dragging it through the woods for five or six miles.' 'Be easy; you know very well it's little better than carion—the cow died a natural death.' 'I'd like to see the man dar say that but yourself. Died! I killed her with my own hand! The moment she began to drop, and her tongue became black, I killed her.' Here the conversation was carried on in whispers; and one of the men (our host) returned, and demanded if we would not eat some supper. 'Plenty of beef here, gentlemen,' said he; 'we can roast a piece in five minutes.' If I had not overheard the conversation, I dare say I would have gladly acceded to the proposition. My whip betrayed the same disgust more openly; and we determined to have some milk, which our lovely hostess proceeded to boil in a singular utensil, used for sundry purposes—baking bread, stewing meat, and now boiling milk to the consistency of sour curds and buttermilk. This delectable beverage was set before us in two basins, but it smacked so confoundedly of onions and grease, that I could not swallow a tithe of it; and finding the heavy wet bread as sticky as beeswax, and about as eatable, I begged leave to retire, if our fair hostess could accommodate me with a bed. 'A bed between the pair of ye, I suppose,' said she. 'A shake-down any where by myself,' said I; and after a deal of whispering we were shewn into a small room with three beds. The host, hostess, and his children, occupied the larger, and we were soon wrapped in the arms of Morphæus. Waking up with the cold some time during the night, I was surprised to see the room brilliantly illuminated by the silvery rays of moonlight streaming down upon our beds through numerous chinks in the roof and crannies in the wall. Truly, the Irish peasantry are behind all others in the comforts and necessities of civilised life. I cannot say they make the best settlers in a new country; they expose themselves to cold, and heat, and damp, in the

woods, just as freely as they do in their native wilds, and soon feel the bad effects of such rashness. Dear-bought experience comes too late; and when fever and ague has done its work, they lose all heart, and betake themselves to drink, or make tracks, as the Yankees say, plunge deeper into the wilds, and perish. The Irish women are a careless set in the woods. Their ignorance of the art of cookery is a sad drawback to the happiness of their husbands and children. That they can boil a pot of potatoes, is allowed on all hands; but in Canada men require a more generous diet than potatoes. Since the schoolmaster is abroad, I don't see why the cook should stay at home. Dr. Bowring, or some of our practical men, should take this thing in hand—a measure of such vital importance ought not to be neglected. Government cooks should be sent out, and cookery-schools ought to be established throughout Ireland. My midnight lucubrations were speedily brought to a close, when my eye rested upon a shining mass at the foot of my bed; stretching out my arm suddenly, I clutched (no 'air-drawn dagger,' but a rib of the quarter of raw beef, which my host, in the plenitude of his hospitality, had laid between our beds."

But the most original portion of the volume is descriptive of a journey to a camping-ground, whither an agent of the American government was proceeding to pay a body of Menominee Indians for the surrender of their lands. At Astor House, the judge hints something about parties who meant to carry off the dollars intended for the Indians; and we are told,—

"The Indian agent, a thin, nervous, gentlemanly-looking man, looked up like a startled rat. On hearing the judge's declaration, he coughed out a response about 'doing his duty, and no more; and this being his first expedition to the Indian country as postmaster, expressed his great anxiety about the money-boxes, his regret that government, in its wisdom, had not furnished him with a guard of soldiers, as usual.' 'The regular troops have been removed from our fort—it is a fact,' said a tall, spare, hook-nosed old smoker, called the major, who had kept up such a well-directed stream of tobacco-juice, and latterly blood, upon the base of the stove, that I really wondered where such a reservoir of nastiness could have flowed from; indeed, the floor was defiled in every direction. It was enough to make a dog sick; and did make two dogs sick close to the stove; and a third, a great black pointer, chose to relieve his stomach upon the red damask sofa, upon which a hot politician sat down unwittingly, and made a great disturbance till the dogs were kicked out. 'The regular troops are gone,' said the major; 'but there are more: there are soldiers enough in Astor and Navarino to guard their own. Where is our troop of cavalry? If the agent wishes it, he can have an escort of good men and true.' This idea suited the present exigency of the times; there was a deal of irrelevant conversation about sabres, and pistols, and carbines, and horses, and saddles; and, finally, it was proposed to the agent (who, with his clerk, sat playing draughts at a broken old draught-board, eking out the men with cents and bits of wood), that he should call on the volunteer cavalry corps to escort him to the payment-ground. But the agent declined the honour; he was not instructed to bear their expenses, by the government; and for his part, a *pis aller*, he would start in the morning without a guard. This reply threw cold water on the red-hot volunteers; they remonstrated; nevertheless

agent remained unshaken. He was warned by the judge, the general, the major, the captain, and others, as to 'the risk he ran of being cut off, waylaid, and done for, by the desperate gang finding in wait for him at the rapids.' Finding all attempts to get up a *corps de garde* ineffectual, several of the pot-valiant men marched off in a huff. But the major waxed merry upon the occasion; he said, 'He had never seen an Indian payment, and from all he had heard about those payments, he had not the slightest desire to see one. He would not walk five rods to see one—not he. He had been satisfied by hearing a neat account of the last memorable payment, at which one man was burned alive, two women killed, several wounded, the whites routed, and several of our brave corps,' said the major, 'put to flight, and sent home *sans chemise*.' The major here recited some verses of a burlesque poem, written upon the retreat of the Green-Bay Greys from the Wolf-River payment-ground, by a medical bard, who had been at the *mélee* and witnessed the 'scattering.'

On the pay-field on the Wolf River, which was reached with some danger and difficulty, the author says,—

"A vast number of lean and wolfish-looking dogs were prowling about the lodges, and a dire yelping was perpetually kept up, as the hungry curs were seen pilfering the provisions or any thing else they could fasten their teeth in. A trader declared that a dog had carried off his lighted lantern in his teeth the preceding night, merely to get at the oil; and woe betide the shoe or mocassin left in the way of one of those active gentlemen. Approaching a larger circle of Indians, I found them gambling away at the mocassin game, a sort of thimble-rig concern. Three or four old Indian blacklegs running a bullet here and there under four moccassins, laid on the ground; the Indians touching with a long stick the mocassin they suspect the ball to be under, parting with their ornaments with a very bad grace, amidst the laughter of the rest, when they lose. The old blacklegs had a bank of wampum, and hawkbells, and silver gorgets, and beads, and all sorts of belts before them, the fruits of their winnings. They kept up a perpetual sort of grunting, bending their bodies over the moccassins, and striking their hands on their knees, keeping time to their monotonous 'Shump, shump, shump.' Osh Cosh has hoisted the American flag over his long wigwam; therefore matters will go off more quietly, it is augured. I was on the point of entering the chief's wigwam, when the loud and rapid enunciation of the grand medicine arrested my progress. Another of the chief's sons was ill, and the grand medicine-man, as in duty bound, kept up a perpetual harangue; it would have been considered an evil omen if a stranger entered the lodge without being formally invited on such an occasion. Well, the further we go, the more we know—always learning,

we go, the more we know—always learning something new. Returned to the council-lodge and found the registry going forward in full force—the head of every family told his name, handed in a bundle of sticks, being the number of his wives and children. Apropos to wives bigamy and polygamy are permitted: Osh Cosh has lately taken unto himself a thin young squaw, having already sons and daughters by two sisters; they all live together in the greatest harmony. While I sat watching the Indians handing in their sticks, an old crone, covered with wrinkles, toothless, bald, and most hideous to look upon, hobbled up to the agent and touched his shoulder. The man of business looked round, and on seeing this dim apparition, said, "What is this?" "It is the old woman of the village," said the agent, "she is the mother of the chief." "She is a good old woman," said the agent, "she can tell us a good deal about the Indians." "She is a good old woman," said the agent, "she can tell us a good deal about the Indians." "She is a good old woman," said the agent, "she can tell us a good deal about the Indians."

almost fell off his perch. He afterwards acknowledged he was 'badly skeered'; this poor old hag presented her bundle of sticks and hobbled out. I suppose, if her exact age could have been ascertained, she would be found the shady side of five hundred at least. * * * Sunday: we marched from the grand lodge to the Pottawattomie wigwam, where a trader, a member of the church, had informed us he intended to hold a prayer-meeting. We found a large body of painted young men playing the moccasin game, and a sort of thimble-rig, right in front of our preacher's domicile: they were prevailed on to move further off, and the preacher, a grave and decent-looking man, invited us to enter his lodge, which smelt powerfully of salt fish and leather; only two Indians attended the preaching, and the congregation was very thin indeed. Our preacher prayed and spoke for three quarters of an hour; he prayed for the conversion of the Indians, and frequently called them 'poor and peed wretches,' in the dark and dismal valley of sin and death. He concluded his sermon rather abruptly, saying, there is 'leave to speak, if any man feels inclined.' No man present feeling inclined to preach, we broke up meeting and returned to our lodges just as the Indians broke up their games. They had held a solemn feast early in the morning, which I did not witness; but, during the day, I saw an Indian baptising a dog by the river-side, preparatory to its being stewed for a solemn feast. The Indians always offer part of every thing they eat to the Great Spirit, and sprinkle their venison, and dog, and bear-meat with water before it is dressed for a feast. * * * The moment the last dollar was paid, down went the American flag, and the agent and his men rushed into their boat, plied their oars, and sheered off from the scene of action. Then the whisky-sellers took the field. The young Indians clubbed together and bought barrels of fire-water, knocked in their heads with their clubs and tomahawks, and helped their friends all round to bowls and cups of the spirit above proof—real fire-water. The result may be anticipated: the whole village became a scene of riot and debauchery. I retreated to my friendly trader's lodge, and found him expostulating with a few young Indians upon the folly and wickedness of getting drunk. Indeed this good man's words and example seemed to have considerable effect on his hearers; he begged of them to quit the village, bag and baggage, now they were paid. Several followed his advice at once, and others began to remove the mats, &c from their lodges; while the Indians who lived in his vicinity lodged their money for safe keeping in his hands. One old trapper actually deposited forty dollars with him, but would not go home—no, he preferred plunging into the midsts of the riot and revelry. Next morning I hardly knew him as he sneaked up, all covered with dirt and blood, to ask for his bundle. * * *

"At night we barricaded the door with empty barrels and logs, but the Indians still came begging for money to buy more whisky, and the rain entered the roof and sides of our lodge. My blanket was saturated; and at midnight I sat up, finding it impossible to close an eye amidst the wild howling, terrific shouts, screams, love and war songs of the drunken savages without. I never heard, or hope to hear, any thing half so horrible again. Indeed, as my host observed, it was worse than bedlam broke loose; it was like hell upon earth. Crowds of unhappy children crawled round our own lodge, crying bitterly; some of them contrived to creep into the empty barrels at our door,

and that barrier was broken down before morning with a loud crash. I had been trying to close in a dry corner, when, looking up, I saw the tall spectral figure of a naked Indian leap through the door-way; he waved a glowing faggot in his hand, and shewed his wild distorted features covered with blood and dirt. 'Now is the hour,' thought I, 'that my rambles will have a finale, for certes this mad savage is on the eve of hurling the glowing log upon my devoted head;' but hardly had the thought flashed through my brain, when the savage fell prostrate on the floor, where, with a dozen more, we found him stark and gory, snoring away the effects of his last night's debauch. The grey morning dawned heavily upon the Wolf River; as I went forth and looked around, not a third of the tents, lodges, and wigwams were standing; all was misery and wretchedness. The ground was covered with drunken savages, stripped of their finery, torn and tangled with filth and briers. The half-breed whisky-sellers plied their vile vocations, determined to sell every drop of liquor they brought to the ground. All the respectable traders had huddled up their goods and retreated, or prepared to start away in canoes. I was not a little surprised to see the old squaws gliding about with rifles, war-clubs, and tomahaws, under their arms; in fact, they are the only efficient police, carrying off their husbands' weapons before a carouse, to prevent bloodshed if possible. Close to a whisky-barrel I found a young squaw labouring a drunken Indian man, who lay very quietly upon his back, quite naked and powerless, while this athletic dame laboured him with a long club. We took the club from her, and threw it away; then she got a stone to despatch him; this we took from her also; and at last she began whipping him with a pine branch, exclaiming all the time against his drunken habits, while she was pretty far gone herself. Another dire battle was raging in the remnants of the lodge of a brave, who had been a gallant *homme*. The squaws were all fighting about him; they seemed all in a heap, in the midst of the skeleton of the lodge, and looked like so many devils caught in a crib. Seven or eight women, of all ages, tore, bit, scratched, and kicked, in this delectable circle; while the gay Lothario, a besotted old Indian, very quietly looked on, stoically smoking his tomahawk pipe, till it was snatched out of his mouth by one of those furies, who began to use it most unmercifully on the rest, till the beautiful *chain des dames* was unfolded by the main strength of the neighbours."

Oh, what a field for Father Mathew!

Newfoundland in 1842: a sequel to "The Canadas in 1841." By Lieutenant-Colonel Sir R. H. Bonnycastle, Knt., Royal Engineers. 2 vols. II. Colburn.

"It cannot rain but it pours," says the old proverb; and so it would seem with regard to Newfoundland, upon which, so long and so much neglected, we have no fewer than four volumes in one week. Their two authors have, however, pursued very different courses. Mr. Jukes has adopted the desultory; Lieut.-Col. Bonnycastle has affected the elaborate and scientific. The former draws the colony as he saw it; the latter all *couleur de rose*, either as it is, or as he expects it to be, when its western shore is colonised, its population well educated, roads, &c. made, and the interior explored. There appears to be not a little to be done! In the mean time we may turn up to and over

the *status quo*, as exhibited by the present work. Lieut.-Col. Bonnycastle begins nearly with the beginning, i. e. the expeditions and discoveries of Sebastian Cabot. He then treats of the first settlements in Newfoundland during the earlier half of the sixteenth century; and enumerates various explorations of this portion of America, which succeeded, under Raleigh and a host of adventurers, for a hundred years. And having brought us down to A.D. 1842, he says, in a loud sort of vaunting tone:—

"The agricultural society of the capital have, therefore, an onerous task to perform. To it the population of the whole island will look with earnest attention; and as its members are already very numerous, and consist of some of the principal merchants and official gentlemen, it is to be hoped that one and all, forgetting personal feud and party-feeling, will cheerfully lend a hand in the glorious work of rescuing the country of their residence, adoption, or birth, from the 'unmerited obloquy it has so long sustained,' arising out of a chain of circumstances originating in national policy, and carried on for the very natural and all-absorbing desire of mercantile speculation, but now no longer necessary, as the banks are not now merely the nursery of British seamen. The island has risen to the rank of a colony of Britain, and, as we shall presently observe, in its local and political position and relations, has become of such vast importance to the mother-country, that it must be both governed and treated, not only in the same way as her continental colonies, but must be cherished and protected as the key and fortress of them all, and the main-stay of British transatlantic power."

This lofty view brings us to the last census, 1836, which gives the population of Newfoundland as follows:—

Males	42,074
Females	33,020
Total	75,694

Of whom were—

Church of England Protestants	26,740	Mostly English, or of
Wesleyan Methodists, and a few other dissenters	10,636	English descent.
Roman Catholics	37,718	Irish, or of Irish descent.

"This (adds our author) would shew a preponderance of the Roman Catholics, consisting then of 3/2; but it appears that that proportion has been much augmented by emigration and birth since that period; and it is very possible, if a correct census were now taken, that the population of Newfoundland is little short of 100,000, all British or of British descent, of which the Irish and native Catholics are not fewer certainly than 50,000, nor are the English, Scotch, and their descendants less numerous. The number of dwelling-houses in 1836 was 11,101; and these, it is known, have very considerably increased all over the settled parts of the island.

"As many readers (he continues) think it fatiguing to refer to tables, but are still greatly interested in such subjects, we shall briefly observe that the church of England members and the Wesleyan Methodists prevail, or outnumber the Roman Catholics in the following electoral districts on the north-east of the island:—Conception Bay, Trinity Bay, Bonavista Bay, Fogo; on the south coast, at Burin, Fortune Bay, and the western shore. In Conception Bay the Wesleyans are the most numerous of all. The congregational or independent church has its chief locality at St. John's, and I should suppose consists scarcely, at the utmost, of more than 500 members in

the whole island. The Wesleyan Methodists it is seen already number 13,000. The church of Scotland has, probably (for its extent is unknown here), 500, chiefly in St. John's, or other large places. The church of England, 30,211. This gives a known total of 44,211 Protestants, who are chiefly English from the west of England, or of English descent, with a sprinkling only of Scotch, and a very few north of Ireland Presbyterians. The Roman-catholic population I have stated as known to exceed 40,000; and so little is yet gathered of the distant stations on the north, south, and western shores, that if the Protestants, as has been demonstrated, amount to 44,211, I have no doubt that the Catholics are quite as numerous; in short, I firmly believe that a correct census would give 50,000 as the real number of each, and that the native-born inhabitants compose more than three-fourths of the whole. It is known, also, that upwards of twelve thousand French reside in Newfoundland; and in the splendid harbours of the Bay of Ingornachoir, on the west coast, there has been seen a settlement of five or six hundred, and it is supposed that in that remote region they actually carry on a thriving trade, and build vessels, notwithstanding treaties. The resident population of Newfoundland, therefore, may now fairly be stated at considerably upwards of 100,000; and the transient population is infinitely greater, for the French employ fully 30,000 sailors, nor do the Americans send out fewer than 20,000 yearly to these coasts."

The chapters on the government, polity, and dissensions in the colony (the latter greatly aggravated by the present of a representative and legislative constitution before the people appear to have been fit for it), are so entirely changed by the recent act of the English parliament, that we need not examine into the waste paper of the past; neither do the manners or customs of the inhabitants, derived from home, offer any peculiarities for observation. Indeed, on these subjects we consider the writer to be rather prolix; though, perhaps, wishing to compose a general history, he could hardly help entering at large into bygone and now unimportant topics. A recent storm in a wash-hand basin is not even so interesting as one while it exists; and Lord Thurlow's comparison in regard to the Isle of Man was consequently more pointed than Lieut.-Col. Bonnycastle's descriptions of the island of Newfoundland.

A few extracts will suffice to illustrate the work, and the "iron-bound coast," as the author is so fond of calling it in his frequent repetitions.

"The best of the modern writers who have noticed this colony echo the sentiments expressed at its first settlement by Hayes and Whitchurch, and the most influential of the merchants have joined the agricultural society, and contributed largely to it. M'Gregor, in his excellent work on the *Colonies*, every where asserts the capabilities of the soil. Montgomery Martin, in 1834, says, 'Although a great part of the island consists of plains, studded with rocks, and termed "barrens," there is a considerable extent of alluvial soil, capable of growing wheat and other grains; springs of fresh water abound every where, and the island is well adapted for the pasture of cattle on an extensive scale.' Martin did not know when he wrote that the word 'barrens' in Newfoundland simply means places denuded of forest. Some of the barrens round St. John's are the best ground of any in its vicinage, and the best cultivated. Again, he

observes: ' Agriculture is extending annually, and, in general, it has rewarded the toil and labour of the careful and industrious husbandman. The land might be made extensively useful in grazing farms; and as potatoes can be raised with much facility, hogs may be fed with success after the country has been more and more opened.' In the *Edinburgh Cabinet Library*, published as late as 1839, by very eminent writers, who have taken great care to obtain correct information about the colonies, the same facts are advanced, and hints are given, that when the more fertile or western portion of the island shall be occupied, Newfoundland will afford means for encouraging emigration. In fact, the prejudices against Newfoundland are fast wearing away, and future generations will see that the fishery and the soil will combine to render it as important as its better known and better treated sisters. They, too, had to struggle against climate and against prejudice in the early times of their attempts at agriculture."

In his geology, Lieut.-Col. B. questions and contradicts many of the statements of Mr. Jukes, and will scarcely allow the iron-bound island to be bare of any capability.

" The island (he states) of Newfoundland is divided by Mr. Jukes into two sections, which, in the map accompanying this work, would be shewn by a line drawn from Cape Ray, the south-western angle of the island, to the head of the Bay of Exploits, on the north-eastern central shore. On the south of that line, all, he says, 'from Dan to Beersheba,' is hopeless and barren; whilst to the north of it there is a land of promise, not flowing with milk and honey, but abounding in forest and fell, in coal and iron, in limestone and gypseous deposits; in short, granite and infertile rocks are the sole productions of the desolation which this writer attributes to one-half of this splendid island; and his misgivings are great about his visions of the other. I fear, or rather, I hope, that Mr. Jukes has been, as most young authors are, a little too hasty in this generalisation; and that whenever the British government may be induced to patronise discovery, much will be found in the interior or central portion, as well as in the south-eastern half, thus somewhat hastily condemned to ever-during sterility, which will not only be fitted for agricultural purposes, but develope likewise mineral treasures and resources; for many of the formations in which these exist elsewhere have been also seen here. In the United States, in Nova Scotia and New Brunswick, great have been the pains taken by the respective governments to develope the geology of those vast territories, and great has been the result; whilst in Canada and Newfoundland the crust of the earth remains unbroken, and its riches wholly unknown. Canada, it is true, has now the means of bestirring herself by the powers and resources attained by the united legislative functions; but Newfoundland must slumber in obscurity, unless the parent state holds out her hand in assistance, and is convinced that it is rather unbecoming to be in total ignorance of the nature of an island which is the nearest of her colonies to herself, and the stepping-stone to, and fortress of, all the rest in transatlantic Britain. * * * * Enough (he adds) has, I trust, been said, without going into dry geologic detail, to prove that Newfoundland is capable of sustaining a large population on its western side, and that that side is vastly superior to the eastern,—which is not, however, the barren desert it has been represented to be, as will hereafter be

shewn; and that, if both were settled as they ought to be, a mutual trade in the necessities of life would result; whilst protection to the fisheries, the command of the Gulf of St. Lawrence, and absolute control of the coal-fields of Nova Scotia, Cape Breton, and Newfoundland, would be achieved."

By his favourable and sanguine views, it does seem to us that our author has much intermingled and confused the *posse* and *esse*; but he has given us a valuable map, which, coupled with such information as may be gathered from the mass, renders his production a useful one in most matters which concern this important island and its swarming seas. With a remark connected with the latter we conclude. After speaking of various species of whales, it is said—

" By this account, carefully extracted from the best authorities, and the result of observation, the commonly received opinions, that the whale is a poor harmless creature, with a throat that would choke with a hazel-nut, vanishes like a long-cherished superstition. Three-fourths of the whole family are fierce, vindictive animals, voracious, and capable of swallowing large fish. Any body who has crossed the Atlantic may have seen the terror of porpoises, and all smaller fry, when pursued by these monsters, who rarely shew themselves in the chase above water; and this fully accounts for so few being captured, excepting in the icy seas, where they are, as it were, hemmed in by the ice and the ships. Those cetaceous animals which afford us oil are generally of the toothless or milder temperament; whilst the biting species, armed by nature with offensive weapons, are seldom captured, and yield us chiefly spermaceti and spermaceti-oil. It is the former which engage the small and irregular whale-fishery of the Newfoundland coast, and that principally on the harbour-coasts of the south and in the gulf. Nothing can be more common in sailing up or down the St. Lawrence, either in the vast region of Labrador, or in the smaller one of Gaspe, than to see whales of all sizes, from the largest finner to the smallest porpoise or dolphin; and the extent to which this fishery is carried on by the citizens of the United States and by our colonists is much greater than has been imagined. In my journal off the Bay of the Seven Islands, I find repeated mention of seeing the black and grey whale in 1831; and since that time I have observed that these are of all the various cetacea common on the coasts of Newfoundland. A gentleman of my office here has assured me that he has seen the huge-headed spermaceti-whale playing like a porpoise, or perhaps pursuing his prey, in the very mouth of the narrows of St. John's harbour."

LIEUT.-COL. SYKES ON BUDDHISM.

The length of our own remarks on the interesting subject of this volume prevented us from making any extracts sufficient to illustrate it: * we now return to it; and select the following passages, chiefly relating to the antiquity of Brahminism.

" One fact is sufficiently remarkable, that in the minute and multiplied details of all the heresies of the followers of Buddha or Brahma, no mention whatever is made, directly or indirectly, of the worship of the Linga, the votaries of which now divide the Hindu world with the Vaishnavas, or followers of Vishnu. Neither Fa hian in the fourth, nor Hiuan thsang in the seventh century, speak of this worship, although they do not omit to notice even isolated temples

of the heretics when they fall in with them in their travels; and, in consequence, the question may fairly be raised, whether the persecuting, blood-stained, and obscene sect of Saivas (followers of Mahadeva) had, at the beginning of the seventh century, sprung into notice, much less into power." *

The following remarks upon the Sanskrit and Pali are no less important:—

" In the kingdom of Chen Chen, now Loo Ian, in the neighbourhood of the Lake of Loo, Fa hian says, the king was a Buddhist, that there were 4000 ecclesiastics, and that the laity as well as the clergy followed the law of India, meaning Buddhism; and from hence, proceeding westward, all the kingdoms more or less resembled that of Chen Chen, excepting that each had its own barbarous language; but that the ecclesiastics all applied themselves to the study of the books of India and the language of India. But Fa hian nowhere makes a distinction between Sanskrit and Pali; and, as he speaks in the singular number, a question may be raised, whether more than one sacred language existed; and as it has been found that the most ancient inscriptions all relate to Buddhism, and are in the Pali dialect, it necessarily results that Fa hian means the Pali when he speaks of the language of India. The Indian words adopted by the Chinese in their writings, owing to their orthography, lose the idiomatic distinctions between the Sanskrit and Pali, so that it is not possible to say whether they belong to the one or the other idiom; but nowhere do the Chinese speak of more than one Indian language, which they call Fan, in which the Buddhist doctrines were written, and through the medium of which they were taught even in China, although derived from Hindustan. This is a very curious fact; for, as it will be seen from Fa hian's narrative, that the kingdoms or states of Hindustan, after leaving the Jumna, were all Buddhist; and as all the ancient Buddhist inscriptions, of many centuries' anterior date to the period of Fa hian's visit from the Himalayas to Cape Comorin, and from Cuttack to Gujarat, are found to be in the Pali idiom; and as there are not any Sanskrit inscriptions of equally early date,—the doubt is strengthened with respect to the simultaneous use of the two idioms at that early period. That the idiom (sacred or common) in which the Buddhist doctrine was promulgated was common over India, is testified by the fact, that Fa hian had no difficulty in communicating with the clergy wherever he went: his object was to copy the sacred writings; and had those of the north and of the south of India been written in different dialects, he scarcely could have failed to notice the fact. M. Klaproth says that the language of India alluded to by Fa hian was probably the Sanskrit, as it is unknown whether the books of the Buddhists were written in Pali at that time. But the inscriptions in Pali, of a long anterior date, many of them containing sacred texts, establish the fact that Pali was in use; but of the existence of these inscriptions M. Klaproth was not aware, or the supposition put forth by him might not have been advanced. It appears also, that the character used in these inscriptions, although for so long a period not deciphered, is simply the antique form of the modern Deva Nagari, each modern

* Professor Wilson says, ' it is highly probable that of the present popular forms of the Hindu religion, none assumed their actual state earlier than the time of Sankara Acharya, the great Saiva reformer, who flourished in all likelihood in the eighth or ninth century.' — *Preface to Vishnu Purana*, p. 10. This opinion, therefore, is in thorough accordance with the testimony of the Chinese travellers."

Sanskrit letter being traceable, letter by letter, into the ancient Pali letters; and it may be supposed that Sanskrit itself has had its modifications and ameliorations, and, like all other languages, was somewhat ruder and less diffuse and polished in its early use than at subsequent periods. The word 'Sanskrit,' meaning 'polished,' 'finished,' 'done,' implies that some ruder material was handled before it was polished into the remarkable language now known as Sanskrit; while the word Pali means 'root,' 'original.' In fact, we have no proof that the Sanskrit existed at this period, and we have ample proofs that the Pali did. Indeed the Vedas themselves, in very ancient copies, are said to be in a dialect unintelligible* to modern Brahmins. Languages, like humanity and states, have their periods of birth, infancy, vigour, decline, and extinction; and their duration is affected by political events. We ask what has become of several of those of antiquity, and by what means is it that others have taken their places? The forcible, comprehensive, and manly English, at the period at which it is a question whether Pali and Sanskrit existed simultaneously, was not in existence; and the same may be said of the Spanish, Italian, modern Greek, and other languages. Is it Sanskrit alone, then, that has an immutable character? Of the unstable nature of languages we need no further proof than in the English of Chaucer, and the French of Labelais and Froissart."

We copy the account of a ceremonial resembling that of Jaggarnath at present, whose temple is on or near the site of a celebrated relic-temple of the Buddhists: the whole bears a suspicious affinity to the system whereby the Pagan festivals of antiquity became Christian in Europe.

The king of Khotan lodged Fa hian in a monastery in which were living three thousand monks, all of whom ate their food in common at a given signal; and he gives an interesting account of the grave and decorous manner in which the meal was conducted. There were fourteen large monasteries in the kingdom, and the smaller ones were too numerous to count. He remained here three months and some days for the purpose of witnessing the procession of images. The ceremonies commenced on the first day of the 4th moon, and continued till the 14th (4th of June to the 18th). It appeared that the roads were swept and watered, the public places put in order and ornamented; tapestry and hangings were placed before the gate of the city; and the king, the queen, and elegant women, took up their stations there. At about a mile and a half, or two miles from the gate, was constructed a car, with four wheels, for the images, about 18 feet high, in the form of a movable pavilion, ornamented with the seven precious things, hangings, curtains, and coverings of silk. The image (Buddha), attended by the highest order of Buddhist priests, or rather those belonging to the metaphysical branch, was placed in the middle, flanked on either side by an image of a Bodhisattva; the three probably intending to represent, as M. Remusat thinks, the Buddhist supreme triad 'of God, the Law, and the Church,' or 'clergy'; behind this triad were placed the Devas of the Indians, the Lha of the Thibetans, the Taegri of the Mongols, &c., such as Indra, Brahma,

&c. &c., these being deemed exceedingly inferior to the pure or purified intelligences of the Buddhists, including Buddhas, Bodhisattvas, and even Arhans. *En passant* may be noticed, not only the singular fact of the carrying supposed Brahmanical gods in procession in a subordinate capacity to Buddha, but also the singular fact that the chief gods of modern Hindu worship, Siva and Vishnu, are not mentioned; while Indra, and Brahma, who then figured, are now in the back-ground: so that the supposed immutable Hindus would appear to have had their fashions in religion, like the Western world. All the images were of gold or silver, ornamented with precious stones. When the images had arrived within one hundred paces of the gate, the king took off his crown, changed his garments, and advanced barefoot towards it, accompanied by his suite: falling at its feet he adored it, burning at the same time perfumes, and scattering flowers. At the moment of the image entering the city, the ladies, and young females in the pavilion, showered down flowers upon the car, so that it was entirely covered. Those who have witnessed the procession of Jaggarnath, or read an account of it, will be struck with the resemblance between a Buddhist pageant of 1400 years back and a modern peculiar Hindu ceremony; for the suspension of caste at Jaggarnath not only makes the celebration peculiar, but involves the whole in mystery; and the uncouth figures of Jaggarnath, and his brother and sister, more like chaitiyas than beings with human form, make the matter more mysterious."

The following is quite new to us, and probably not less so to our readers:—

"In the country of Candahar a tumulus is spoken of, measuring 216 metres, or 708³ feet English in height, throwing the great pyramid of Egypt into the shade; and we are indebted to M. Masson and General Ventura for a knowledge of the sacred objects enclosed in these tumuli, some of which are at this moment in the museum of the India House."

The phrase "going on wheels" preceded that of "going by steam;" but we doubt whether even this last, though worked by Sidney Smith's "forty-parson power," could exceed or equal the celerity of the following mode of "getting to heaven":—

"The wheel plays a great part in Buddhist ceremonial. The priests pasted prayers on it, and turned it round. One turn had all the efficacy of an oral repetition; the faster they turned it, therefore, the faster they were getting to heaven. The wheel also was looked upon as the emblem of those kings who were supposed to have obtained universal dominion; and this explains the hitherto unintelligible fact of some of the figures of Buddha in the caves of Western India being seated on the edge of a wheel, whence they were called Chakravarti in Sanskrit, or turners of the wheel. In the *Ramayana* the term is also applied to Rama, and some of his ancestors. The wheel also was looked upon as the emblem of the transmigration of the soul."

The date of Buddhism in China is thus incidentally given:—

"The ecclesiastics in Fa hian's company asked him, if it was possible to know when Buddhism first commenced to pass to the eastward to China; and he replied, that he was informed by the people of the country, who had it traditionally, that it was after the erection of the statue [at Tholi (Dardu)] that the priests of India first passed the river, carrying with them the sacred books and precepts; that the statue was

erected 300 years after the death of Buddha, which corresponded to the reign of Phing Wang, of the family of Tcheou, who commenced his reign in 770 B.C., and died in 720 B.C.;* but this relates to its introduction into Tartary, and the borders of China. However, in 212 B.C., Che li fang, and eighteen other Buddhist priests of the West, made their appearance in China, and were thrown into prison by the emperor Chi houng; and it was only in the year 61 of our era that Buddhism was officially adopted, although long before known."

The following we extract, not only as shewing the Brahmins in a new light, but also as particularly interesting at this moment, when our position in Afghanistan enables our savants, military and civil, to examine into the traces of the facts:—

"Having passed the river, Fa hian sets foot in Afghanistan, to the north of Cabul in the kingdom of Ou tchang [Oudyana], where the people were in the absolute use of the language of Central India, their habits, manners, and customs being the same. Buddhism was in eminent honour; there were upwards of five hundred monasteries of the ethical section. Strangers were received cordially in them, and lodged and fed for three days. Nevertheless, in this eminently Buddhist kingdom we have the first mention of Brahmins. The Chinese author Ma touan lin placed the kingdom to the east of Kandahar, somewhere probably about Attock and Peshawer; and there also he locates the Brahmins. 'The first among the tribes of barbarians.'† This very remarkable passage necessarily gives rise to important reflections. The Brahmins then were considered as a tribe only; and not only as a tribe, but as a tribe of barbarians—that is to say, of those who did not make part and parcel of the majority of a nation; not as the hierarchy of a whole people, and being possessed of formidable religious or political power, but as a foreign community in a state. And be it recollect that when they are thus spoken of, it was 1400, or 1500, or at least 1000 years after the appearance of Saky Muni, the third Buddha, up to which last period they had not struggled into importance; but they were now beginning to get that hold upon sovereigns and their people which ultimately ended in their establishing their supremacy. In the 502d year of Christ, it appears that an embassy from this very kingdom of Ou tchang went with tribute to the emperor of China, King ming, in the third year of his reign. After describing the situation of the kingdom, the account says, 'the Brahmins are considered as the superior caste amongst the strangers; they are well versed in the science of astronomy, and in the calculation of lucky and unlucky days, and the kings do nothing without consulting their decisions.' Here again they are looked upon as not only not forming an integral part of the nation, but as strangers; and here it appears they pursued the identical line of conduct to establish their influence which they are at this moment pursuing amongst the Buddhists in Burmah, Siam, and Cochin China, namely, practising judicial astrology. At page 122, the learned and philosophic are separated

* "This would place the birth of Saky Muni in about 1027 or 1029 B.C., and his death in 950 B.C., which is an approximation to Sir William Jones's date. Prof. Wilson, in the *Oriental Magazine* for 1823, quotes less than eleven authorities, every one of which establishes the era of Buddha more than 1000 years B.C. (five of them give B.C. 1027), and five other authorities make it above 800 years B.C."

† "This could not have been written in enmity, for in many Buddhist inscriptions kindness and charity to Brahmins is recommended."

from the Brahmins, or men who walk in purity, and who cultivate arithmetic and the occult sciences, such as astrology, the art of divination, &c.

"Fa hian arrives at the celebrated city of Muttra [Mathura] on the Jumna, having passed, in his route, a great number of temples, in which lived several tens of thousands of ecclesiastics. He does not say that they were heretics, or who or what they were; but had they been Buddhists, he, no doubt, would have mentioned it; and, considering that he passed the localities, not far from where Alexander found a town of the Brahmins amongst the Malli, it is very probable the whole of the country between Bakkar on the Indus and Muttra was inhabited by a Brahmanical people, or at least by the Rajputs; and this is the more probable from the very remarkable and decided language of Fa hian which follows:—'At Muttra, on both banks of the river, there are about twenty monasteries, which are capable of containing about 3000 ecclesiastics; and the law of Buddha recommences to be held in honour,' where it had flourished uninterruptedly from the time of Buddha; that is to say, for 1400 years according to the Chinese dates, or 1000 years according to the modern Ceylon Buddhists. 'From the time of leaving the deserts (no doubt those of Jay-sulmen and Bikaneer) and the river (Jumna) to the west, or rather having passed to the eastward of the deserts and the Jumna, all the kings of the different kingdoms in India are firmly attached to the law of Buddha; and when they do honour to the ecclesiastics, they take off their diadems. They, and the princes of their families, and their officers, give them aliments with their own hands. When this is done, a carpet is spread for the ecclesiastics, and they place themselves opposite. In the presence of an ecclesiastic they would not attempt to recline or sit on a bed; and this custom, which the kings observe to testify their respect, commenced when Buddha was in the world, and has continued from that time until the present!' M. Remusat very justly calls this a remarkable passage, testifying, as it does, that in these regions Buddhism had continued uninterruptedly from the sixth century before Christ until the fifth after Christ; that is to say, more than one thousand years; and that too in the very seat in which Puranic fables locate the holiest places of Brahmanism—Muttra, Benares, Allahabad, Oude, and the banks of the Jumna and Ganges. Singularly, also, is the honesty and good faith of this simple-minded man corroborated by the ancient inscriptions and coins which have been brought to light within the last few years. Of the thousands of coins found in India up to the period or time of Fa hian, there is not one that has any relation to Brahmanism; and the same may be said of the numerous inscriptions. There is no proof even of the existence of the Sanskrit language at this time, all the ancient inscriptions being in a dialect barely removed from Pali, or the language of the Buddhists. From China, through Tartary to Ceylon, with the exception of the inhabitants on the tract noticed between the Indus and Jumna, Fa hian had found only Buddhist kings and a Buddhist people, with traditions of the existence of the same state of things for the preceding 1000 years, or, according to the Chinese dates, for 1400 years."

We must ourselves add, that the complexion of the Brahmins bears out the suspicion of a northern origin; and it is no less remarkable, that two Arabian traditions, of at least 1200 years' unquestionable date, affirm a connexion to have formerly existed between the magicians

of Egypt and those of India, China, and the Islands towards the frontiers of the latter power.

Conchologia Systematica, &c. By Lovell Reeve, A.L.S. 4to. Part X.

THIS excellent work proceeds in an excellent manner. The present Part treats of the *Turbinacea*, *Parasitica*, and *Canalifera* families; and we have pleasure in selecting from the latter a notice of the origin of *Murex* (*uude derivatur*), which is new to us, as we do not remember to have met with it in any English or modern author:

"In the early ages of Greece, it was customary for the *κῆρυξ* or common crier to introduce himself to the notice of the people by lustily blowing through a shell. We learn from tradition, as well as history, that the *Triton tuba* or trumpet-shell (*Murex Tritonis*, Linnæus) was the one commonly selected for that purpose; but it is more than probable that the shells of many other *Canalifera* were used. Be that as it may, it is certain that the word *Keris* was applied by Aristotle from that circumstance to all the canalicular shells with which he was acquainted; and it appears to have passed, by a strange process of corruption, into that of *Murex*. We ascribe the formation of this genus to Linnæus, because the canaliferous mollusks were indiscriminately associated by the earlier naturalists under the several titles of *Murex*, *Purpura*, or *Buccinum*; but it has since his time been variously and judiciously dismembered; first by Bruguière, for the introduction of his genera *Fusus* and *Cerithium*, and afterwards by Lamarck, for those which are now generally adopted. The shells of the murices are chiefly distinguished by their profuse and elegant display of varices; and when it is considered what an impediment the many spines and ramifications with which they are ornamented might offer to the regular evolution of the whorls, it becomes both interesting and important to notice in what manner this emergency is provided for. The method is simply and beautifully contrived: the murices, like many other mollusks, appear to have the power of slowly abrading any portion of their shell by means of some powerful solvent, and of thus removing every obstacle to its growth. The shell of the *Murex cornutus* exhibits this mode of operation distinctly: on the left of the aperture, just above the columella, may be seen the remains of a spine, which has been removed for the purpose of spreading the finishing layer of enamel. The varices are said to be formed by certain parts of the mantle, which are projected only at intervals, for the purpose of furnishing a protective margin to the shell during a period of rest."

New Zealand: its Advantages and Prospects as a British Colony: with a full account of the Land-claims, Sales of Crown-lands, Aborigines, &c. By C. Terry, F.R.S., F.S.A., &c. 8vo, pp. 366. London, T. and W. Boone.

We have had of late such frequent occasion to express our sentiments on the immense promise of New Zealand as a British colony, and to quote, at considerable length, the intelligence of and from that settlement, that we will only say of Mr. Terry's volume, it embodies, in the most ample manner, all the information which can be arrived at on the subject.

Village Pencillings, in Prose and Verse. By Elizabeth Pierce. Pp. 285. London, Pickering. An amiable volume. We can say no more.

The Year-Book of Natural History for young Persons. By Mrs. Loudon. Pp. 264. J. Murray.

HERE we have much real and useful instruction delightfully blended with amusement. Mrs. Loudon has simplified that information which she is so competent to administer to the mature, down to the understandings of youth; and her every month's division of interesting subjects in natural history is well calculated to infuse the love of an innocent pursuit, productive at the same time of pleasure and of knowledge.

The Juvenile Miscellany of Amusement and Instruction. Pp. 320. Smith, Elder, and Co. ANOTHER nice volume, in prose and verse, of a more desultory character, and conveying information on many different subjects—industrious occupations, history, foreign customs and manners, botany, &c. &c. &c., and all addressed to desirable moral purposes. Some of the hints may suggest pleasing experiments to young ladies at school or at home.

The Cottage on the Common, and the Little Gleaners. By C. M., author of "The Child and the Hermit." Pp. 105. London, W. J. Cleaver.

WE are reminded, by a quotation from the *Lit Gaz.*, how worthily we thought of the preceding child's book by the author; and we are happy to say that her new and justly encouraged attempt is of an order altogether to place her high among the judicious and charming instructresses of youth. There is a fine moral feeling, no cant, and a tenderness well calculated to touch the hearts and, through the hearts, the affections and sympathies of the infantile mind. This is a sweet little book for children.

Little Susan: a Tale in easy Words, for Children under six Years of Age. By Aunt Sophy. London, Hooper.

RATHER fine; but inculcating good conduct in a way intelligible to very young people.

Little Stories from the Parlour Printing-Press. Pp. 182. Smith, Elder, and Co.

A NUMEROUS parcel of good lesson-stories fitted for such capacities: we cannot say that all the reasoning, however, though well meant, is convincing for the minds of children. *Etc.* *gr.*, not to be afraid of wasps is a rather hard task in this weather.

A Guide to the Property and Income-Tax, &c. By the Inspector-General of Stamps and Taxes. 2d edition. 8vo, pp. 226. London, Clowes and Son.

A GUIDE through any difficulties which may attend the making of returns under, or understanding, this act. All we wish is, that the book may not be needed in 1845.

Tit. Livii Historia, etc., cum Annotationibus, etc. à Jacobo Prendeville. Editio nova, pp. 575. Dublin, Curry, jun. et Soc.; Lond., Longman et Soc.

AN excellent edition of the great historian, with ample notes, and doing credit to Dublin scholarship and the Dublin press.

Romanism and Dissent, &c. By the Rev. James Tidemore, LL.B. Pp. 131. Parker and Co.

A THOROUGH Church-of-England publication, such as the present temper of the times has called forth in such abundance. Christian peace must have become almost a byword, where there is nothing but controversy and ambitious contention. This volume is ably written, and discusses many points with power and effect.

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History of the Church of Christ until the Revolution, A.D. 1688. In a Course of Lectures. By the Rev. C. Mackenzie, M.A., Vicar of St. Helen's, Bishopsgate. Pp. 399. London, Smith, Elder, and Co.

WHEN religious struggles run high, as when political parties are nearly balanced in the contest for power, the press is sure to represent the state of affairs by the mass and frequency of its issues. Thus we have had of late many Church-histories, and many works of various character on the side of Romanists, the Church of England, Dissenters of every hue, and disputants upon points of every shade and description. Among the rest the present volume takes its stand, full of the charities of life, but anxiously enforcing the claim of the Anglican Church to be the true one, and weeded of the errors of Rome and mistaken doctrines of dissent. Its historical views are comparatively brief, and so far better than the very prolix folios of other times; and though the author is able and earnest, he is not bigoted or intolerant.

ORIGINAL CORRESPONDENCE.

To the Editor of the *Literary Gazette*.

Conduit Street, Aug. 10, 1842.

It is really, sir, with a feeling of indignation that I find myself once more called upon to defend myself against the unjust statements and actually false averments of Alexander Bain, who has again attempted to fix upon the minds of those of your readers who are not disposed to enter into a minute examination of the question at issue, the belief that I have appropriated to myself inventions to which he alleges himself entitled. As your space is doubtless as valuable as my time, I shall at once place before you the following documents in refutation of his charges; the first of which is, that the telegraph-clock and the printing-telegraph are not my inventions. I have already shewn in my former letter, that it is impossible for any person who sees and understands the principle and operation of my last electro-magnetic telegraph, invented in 1839, to doubt for a moment that both one and the other are direct and immediate applications of that invention. I shall therefore not press any further observations of my own, but present to your readers the conclusions arrived at upon this point by eminent practical men of science:—

August 10, 1842.

There cannot be the slightest doubt that Prof. Wheatstone's printing-telegraph consists of his previously invented electro-magnet* telegraph, with an addition, viz. that of an apparatus for printing the signals, which the original instrument only exhibits to view. When this addition is removed, the telegraph itself remains complete in all its details without requiring the least alteration. It is equally clear that Prof. Wheatstone's telegraph-clock is merely an application to a particular purpose of his electro-magnet telegraph.

ROBERT WILLIS,

Jacksonian professor of Natural and Experimental Philosophy in the University of Cambridge.

J. F. DANIELL,

Professor of Chemistry in King's College, London.

N. ARNOTT, M.D.

HENRY MOSELEY,

Professor of Natural Philosophy in King's College.

W. SNOW HARRIS.

The second charge is, that he communicated these inventions to me in August 1840. This, after what is above stated, can only mean that he communicated to me the applications in question of my invention at that time. It is evident that the proof or disproof of this turns entirely on points of date; and I am thus most fortunately relieved, by the introduction of unquestionable testimony, from a discussion which might be as tedious to your readers as it would be irksome to myself. I have already shewn that long before the date he has assigned, I had unreservedly and publicly conversed about those applications to many persons. In order that no doubt of this may remain, I subjoin notes from Mr. Martin, the eminent historical painter, and other gentlemen referred to in my first letter, which define the dates at which I made the communications respecting the telegraph-clock to them. I have previously given the evidence of a workman of mine to the same effect. Absence on the Continent prevents me at present obtaining a similar corroboration from the astronomer royal:—

30 Allsop Terrace, New Road, July 18, 1842.

My dear Wheatstone,—It was in May 1840 when you explained to me at King's College the proposed application of your electric telegraph for the purpose of shewing the time of a distant clock simultaneously in as many places as might be required. I am able to speak to the time with tolerable accuracy, as it was a few days after we had dined together at the house of a mutual friend, which I have the means of knowing was on 16th May, 1840; and I further remember, that when you were describing your plans, I made the observation, that "you proposed to lay on time through the streets of London as we now lay on water." I remain, my dear Wheatstone, ever faithfully yours,

JOHN MARTIN.

Prof. Charles Wheatstone, &c.

King's College, July 18, 1842.

Dear Sir,—In the spring of 1840 you frequently conversed with me on the subject of applying the principles of your telegraph to the purpose of making several dials at any required distances simultaneously shew the time indicated by a single clock. At that time I was often in your room, and occasionally assisted you in your experiments. Your communications to me were made before the 17th of July, 1840, as at that period I left town, and did not return until the winter.—Believe me, dear sir, yours truly,

Prof. Wheatstone, &c.

Erchtheum Club, July 21, 1842.

My dear Sir,—You described to me your plan for telegraphing time on the 20th of June, 1840, at King's College. I am able to recall the exact date, because a friend of mine, who had been invited to witness your experiments that day, was prevented from coming by an engagement to be present at a public breakfast given by the directors of the Southampton Railway. The substance of our conversation was as follows:—I was turning the handle of the rheotome,* and watching the consequent motions of the dial, and I said, "If the rheotome were turned round at a uniform rate, the signals of the telegraph would indicate time." You replied, "Of course they would; and I have arranged a modification of the telegraphic apparatus by which one clock may be made to shew time in a great many places simultaneously."

* I have given this name to the wheel that makes and breaks the circuit, which in the telegraph is turned by the finger of the operator, and in the application in question is carried round by the motion of a clock.

ously." I expressed a curiosity to know how this was done; and you explained to me, by means of drawings, the plan of making and breaking the circuit by the alternate motion of the pendulum of a clock, so as to produce iso-chronous signals on any required number of dials. You shewed me some other ways of doing it; but the plan of the pendulum particularly fixed itself in my memory on account of its simplicity.—I am, my dear sir, yours very truly,

F. O. WARD.

The following note from Mr. E. Cowper, a gentleman well known to the mechanical world for his improvements on the printing-machine, refers my printing-telegraph to June 1840. This evidence is in addition to the document signed by Bain in August, to which I formerly referred:—

St. Petersburgh Place, Bayswater,
July 29th, 1842.

Dear Sir,—At the time you mentioned to me that you had contrived an addition to your electric telegraph by which it could be made to print the letters instead of merely shewing them, you asked me for some information respecting the mode of preparing the manifold writing-paper, which you proposed to employ, and on the best form of type for obtaining impressions with it. The note in which I answered these inquiries respecting your printing-telegraph was dated June 10, 1840.—I remain, dear sir, yours sincerely,

Prof. Wheatstone, F.R.S., &c.

EDW. COWPER.

As the only questions at issue are conclusively settled by these statements of disinterested parties, I might be justified in passing over your correspondent's assertions, which relate to circumstances subsequent to the dates given; but as this might appear to be acquiring in their truth, I will trespass on your space with a few observations.

It is quite untrue that Mr. Bain ever exhibited to me a model of an electro-magnetic clock, either before or after he was employed by me. He has not yet given the least proof of his having had in his possession at the time he mentions any such model; he has not yet adduced the testimony of any person who then saw it.

It is equally untrue that Mr. Bain shewed me, at the time he refers to, any model of an electric printing-telegraph. He had merely a model, if so rude a thing can be called a model, of a small part proposed to be added to my electric telegraph, to effect a purpose for which I had before contrived far more efficient means. The part in question was simply a mechanical addition, involving no scientific principle. So far from the work done by him when he was employed by me, entirely relating, as he states, to his own inventions, the mere inspection of it,—and it remains at present as he left it,—will shew that it was essentially copied from the telegraph invented by myself a year before; and this was done under my own immediate directions.

More than eighteen months have elapsed since Mr. Bain commenced his infringements; and notwithstanding the assistance he has received from the proprietors of the Polytechnic Exhibition, and from other parties who are now connected with him, he does not seem to have advanced beyond imitating the mechanical adaptations of the electric telegraph. Of the real principles of telegraphic communication by electro-magnets, which, assisted by the beautiful theory of Ohm, I was the first to determine, some years since, he evidently knows nothing. The instrument lately shewn as his at the above exhibition, might work, indeed, like any other

* This expression is used to distinguish the telegraph referred to from my magnetic-needle telegraph, invented in 1837.

usual electro-magnetic apparatus, in a room with a powerful battery, but it would utterly have failed to work through any considerable length of wire; while it is well known that my telegraphs are caused to act through many miles of wire by a few voltaic elements of very inconsiderable dimensions. Nothing more is requisite to shew the utter ignorance of the writer and his advisers on points relating to the laws of electricity, than his assertion that a wire would be made red hot before a current could be obtained sufficiently strong to make a great number of electro-magnets act simultaneously in the same circuit. Every one acquainted with the subject knows, that to produce a given effect in each electro-magnet, the number of elements of the voltaic pile would require to be in proportion to the added resistances in the circuit; but, this condition being fulfilled, the intensity at every section of the wire, and consequently its temperature, would remain the same.

In conclusion, I will merely refer to the letters of Sir P. Laurie and Mr. Baddeley. And what are these letters, after all, brought forward to prove? that Mr. Bain, long subsequently to the dates I have referred to, called upon these parties, and told them he had made certain inventions, which it does not appear they ever saw. Sir P. Laurie's letter seems to have been written with a kind wish of introducing a countryman to the Lords of the Admiralty, and apparently without any intention of its being applied to its present use. It cannot be any disparagement to this gentleman's judgment to observe, that the highest mechanical attainments could not enable a person, after the lapse of nearly two years, to pronounce of his own knowledge, from a single conversation about a machine which he had never seen, that such machine was then "in a complete state."

With respect to the note written by Mr. Baddeley, with whom I have not the honour of being acquainted, I will merely observe that several of the assertions and negations which it contains could not have been within the personal knowledge of the writer. Several of those which Mr. Baddeley has stated as facts could only have been derived directly, or by inference, from the statements of Mr. Bain. Perhaps Mr. Baddeley may find some reasons for doubting the perfect accuracy of his friend Mr. Bain's information, viz. that "Prof. Wheatstone was at that time unknown to him" (Mr. Bain), if he will refer to the 87th Number of the *Inventor's Advocate*, where he will find that person stating that he had made communications to me on "the 1st day of August," 1840. If his visit to Mr. Baddeley, therefore, was on any other day in that month, he must, from his own admission, have previously known me. I have strong grounds for thinking this was the case; for, not many weeks after Mr. Bain was employed by me, and while he was under a written engagement not to communicate what he was about to any other person without my permission, he called upon other parties in the same manner as Mr. Baddeley says he called upon him, and stated also on these occasions that he had made the inventions in question, and was looking for some person to assist him in bringing them before the public. I have been informed of this by Mr. Irving, one of the gentlemen to whom he so applied.

I have now done with these unjustifiable charges, which have been brought forward solely for the purpose of giving a colourable pretext to infringements, which certain parties are endeavouring to make, of the patents for the electric telegraph obtained by myself and

Mr. Cooke. These infringements, if attempted to be carried into effect, will be the subject of inquiry in a court of law—a more proper place for the discussion of such matters than the columns of a literary journal.

C. WHEATSTONE.

ARTS AND SCIENCES.

GEOGRAPHICAL SOCIETY.

June 27.—Mr. Hamilton, president, in the chair. Read: "The narrative of a survey of part of the south coast of Asia Minor, and of a tour into the interior of Lycia, in 1840-1, by Mr. R. Hoskyn, master of H.M.S. Beacon, under the directions of Commander T. Graves, communicated by Captain Beaufort, R.N." On the 28th Nov., 1840, Mr. Hoskyn sailed from the harbour of Piraeus in the Isabella decked boat, with Mr. Harvey, assistant-surgeon, and a crew of eight hands, for the coast of Asia Minor; and after encountering some severe gales, they reached Rhodes on the 14th Dec. They commenced their survey at Cape Kezil-bournoon, rounding which they arrived at the Bay of Keuy-Geeze-tchai, and visited the extensive ruins of Caunus; from hence, ascending a stream, which they presume to be the Calbis, they came to a lake 6 miles long and 2½ wide, with a depth of from 3 to 13 fathoms water, which is brackish. This lake receives the Yuvalaki, the only perennial affluent. In the winter several other streams fall into the lake; and at this season all the plain from the lake to the sea is inundated. The promontory of Kapavya separates Keuy-Geeze-tchai from the Bay of Dalamon. The village of the same name is about five miles from the sea, and is of little importance. Near the shore, on the south-east part of the Bay of Dalamon, some ruins were found. This is conjectured to be the site of the grove of Latona. Near this spot is Cape Artemisium, a rugged and bold promontory, nearly insulated. On rounding this are some fertile islands, producing tobacco of superior quality. These islands separate the Gulf of Scopae from the Gulf of Makry. In a small bay to the north of these islands are some rock-tombs, and the remains of an Hellenic fortress. The inscription on a Lycian tomb was copied. Every creek, island, and bay in the Gulf of Scopae has ruins of the middle ages. On the mountains to the north is an ancient site, probably Dedala; and here are numerous tombs in the rocks, in the usual Lycian style, some of them well finished. The mountains are serpentine, and terminate on the shore in stupendous cliffs, inhabited by vast numbers of pigeons. The harbour of Makry is perfectly secure, and well sheltered from all winds. The eastern shores of the harbour are low and marshy; the scale is on the south shore, in the midst of a marsh: it is a wretched collection of hovels, surrounded by the ruins of the ancient city of Telmessus, and is very unhealthy in the summer months. The rock-tombs here have their entrances adorned with Ionic columns, and are otherwise finished in the most elaborate style. The city must have covered a great extent of ground. Leaving Makry, and rounding the bold coast to the south of it, they passed Cava Angistro and some islands covered with ruins of the middle ages, and entered the port of Levissey, where their survey of the coast terminated. Hence Mr. Hoskyn and his companion returned to Marmorass for provisions. There are two channels to the harbour, of which the eastern is the best, though too narrow for a large ship to work through. Admiral Stopford's fleet was lying here, and its presence set the whole neighbourhood in motion to procure supplies.

Before the expedition to Egypt rendezvoused here in 1801, the harbours of Marmorass and Karagatch were scarcely known; but they have now been accurately surveyed, and the seaman may run fearlessly into any of its fine harbours and procure such supplies as the country affords. Cape Marmorass is seventeen miles N.E. of the north point of Rhodes. From Marmorass Mr. Hoskyn again visited Macry, whence, on the 5th March, 1841, accompanied by Mr. Harvey, he started on a trip to the ruins of Xanthus, wishing, as he says, to make all the additions in his power to the geography of the country, and not being aware that Mr. Fellows had already been over the ground. The travellers took the circuitous route by Hoozomilee, five hours from Makry. On a mountain near the village are the ruins of a Greek city, on approaching which they observed numerous tombs excavated in the rocks, which had been thrown out of their position by the violence of earthquakes: one, a sarcophagus, highly ornamented, has been removed from its original site in an entire state to a considerable distance, and now lies at the head of a ravine inclined at an angle of thirty degrees, apparently waiting for the next shock to precipitate it to the bottom. The ruins in question have been ascertained by Mr. Fellows to be those of the city of Cadyanda. Leaving Hoozomilee, they followed a ravine leading to the valley of the Xanthus, and travelled along the banks of this river, which they crossed by a substantial bridge of five arches, built by a pasha of Algiers named Hassan Pasha, a native of Deuvar, which place he had left when a youth in indigent circumstances; and on the attainment of riches, he did not forget his native country, as this bridge and other edifices testify. Continuing along the left bank of the river, they passed some sulphureous springs, used by persons affected with cutaneous disorders. Having reached the village of Deuvar, the travellers ascended to the ruins of Tlos, whence the view is described as one of the finest imaginable. The guides refused to take them on to Xanthus by the left bank of the river, alleging that the passage of the Mangher Tchai, an affluent of the Xanthus, was more dangerous than the Xanthus itself. The Xanthus was therefore forded at Sakalat Keuy, where it is about 100 feet wide. The route now lay over wooded hills, among which they observed an abundance of Valonia. On approaching Koonik the valley contracts, and the river flows between steep banks and under precipitous cliffs. Near this place were ruins, and among them a theatre of somewhat peculiar construction. Of Xanthus Mr. Hoskyn thinks it unnecessary to say much, as it has been so fully described by Mr. Fellows. The next object of attention was Pinara, on approaching which Mr. Hoskyn says they were much struck with the grandeur of the scene. The cliffs were so filled with tombs as to appear at a distance like the burrowings of some animal. The ruins of Pinara occupy a great extent of ground, and many of the rock-tombs are deserving of the highest admiration from the great beauty of their finish. On passing along the foot of the mountains, on his return to Makry from Pinara, Mr. Hoskyn remarked the evidences of a former extensive cultivation with which the present state of the country presents a sad contrast. It is nine hours from Pinara to Makry. On the 21st May, the party rejoined the Beacon at the island of Paros, after an absence of six months. On the 7th of October, Mr. Hoskyn again left the ship to prosecute the survey of the coast. The first place visited on this trip was the Bay of Kali-maki; and after fixing the mouth of the Xan-

thus, Mr. Hoskyn and his companion, Mr. Forbes, proceeded to Makry to make arrangements for another tour into the interior. Leaving Makry on the 22d October, they crossed the Xanthus by the bridge already mentioned, and proceeded towards Almacee: on the route various ruins were passed, and a peak of 9000 feet was ascended, where good observations were made, and where Mr. Forbes, whose object was natural history, added considerably to his collections. The highest peak of the Massicetus mountains was seen to the southward, towering to the height of 10,000 feet. Many caravans were passed going from Almacee to Makry; they were chiefly laden with wheat. The plain of Almacee is about 5000 feet above the sea; it was crossed over to the village of Armutloou, situated at its south-east extremity: here also were sarcophagi and ruins, but no inscriptions. Passing along the east side of the plain and crossing a stream, they reached Almacee, said to be the largest town in this part of Asia Minor. It stands at the north-east end of the plain, in a little valley or natural amphitheatre of the mountains. It is surrounded by gardens, and well watered; the houses are built of unburnt bricks, and roofed with thin tiles: it contains about 1500 houses, has several mosques, a bazar, and a market on Thursdays. Many Franks resort here—their purchases are generally sent to Makry for exportation. Every thing here indicates an industrious people in easy circumstances. There are no traces of antiquity at Almacee. Near it is a stream which ingulfs itself in a cave of the rocks. Leaving Almacee, the party proceeded in a westerly direction to Keziljar and Yuvali, whence they ascended a steep hill, and arrived at some ruins, with many tombs scattered about, the lids of some of the sarcophagi being ornamented with bas-reliefs: here two inscriptions were copied. From this place they descended into another series of elevated plains, and came to the village of Sehdehler Yalla. The term *yalla* signifies a highland district; and every important place in the low countries has its *yalla*, whether the inhabitants repair to escape the heats of summer. At Sehdehler Yalla there are many vestiges of antiquity. Skirting the plain, they came to Oroblojahr, where are some fine ruins, and some inscriptions; the covers of the sarcophagi being generally ornamented with the figure of a lion. From hence the travellers proceeded to Tremeli, on the road to which, on a hill, are the ruins of a temple of white marble. At Kasra there are very extensive ruins, and many inscriptions, generally well preserved. At Tremeli the party were informed of extensive ruins at a place called Horzoom, three miles to the north-east of Tremeli, but unfortunately they had no time to visit them. Tremeli contains 500 houses; it is situated at the base of the hills, on the south-east side of an extensive plain, and is surrounded by gardens and vineyards. A stream rises near it which joins the Dalamon river. From Tremeli the party set out on their return to Makry; on the road they crossed a pass, which could not be less than 6000 feet above the sea, and it would soon become impracticable if not attended to: they passed several khans erected for the use of travellers, but not a single village till they reached Dereh Keuy, whence they continued their route by Hoozoolme to Makry, where they arrived on the 2d November at sunset. The Rev. E. T. Daniel, Mr. Forbes the naturalist, and Lieut. Spratt the assistant-surveyor, are now travelling in the south of Asia Minor; and from their talents and energy much valuable information

may be expected. Near two miles north of Orahin (Araxa) the Xanthus is seen issuing from the ground, and immediately becomes a considerable stream; it is joined at the same spot by its tributary from the Yaida. The natives say the waters at the source of the Xanthus never diminish. This river owes its colouring matter to the large tertiary beds through which it flows. When the snow lay deep on the mountains, the footmarks of numerous leopards and jackals were visible. Mr. Hoskyn says, that in their excursions the natives were uniformly civil and obliging: their hospitality to those of their own nation is perfectly gratuitous, but from strangers an acknowledgment was always expected.

The above, being but an extract of the paper read, conveys a very inadequate idea of the country described, which, for abundance of interesting ruins and objects of antiquity, and for beauty of sites, is perhaps unrivalled.

CIVIL ENGINEERS.

June 21st.—Mr. W. Cubitt, vice-president, in the chair. The first paper read was a voluminous "History and description of the construction of the Canal of Katwyk (Holland)," by the Chevalier Conrad, the son of the able engineer by whom those celebrated works were projected and constructed. The memoir had been translated and condensed by Mr. Manby, the secretary, in order to bring it within the limits of reading at an evening meeting; and although the details of the works were necessarily omitted, enough was given to shew how valuable for reference such a work must be in the already extensive collection of the Institution of Civil Engineers, especially when illustrated by such detailed drawings as those which were exhibited. The introduction gave the general outline of the locality of the canal, which was undertaken for the purpose of draining the district of Rhynland, which contains about 317,500 English acres, of which 60,692 acres are under water, in lakes, canals, &c., including the lake of Haarlem, which alone covers 45,000 acres. The drainage of the other parts is effected by 260 windmills, working scoop-wheels or Archimedes screws. The historical portion treated of the naturally unfavourable position of the district for drainage; described the various projects for accomplishing it, in their order of dates; alluded to the alteration of the relative levels of the land and sea in Holland; detailed the progress of the various projects and reports until the actual commencement of the work under Conrad, Blantien, and Kros, under the superintendence of Mr. Brunning, chief engineer of the Waterstaad: the latter gentleman died soon after, when the chief direction devolved upon Mr. Conrad, whose plans were followed with such activity, that the work was entirely finished between the years 1804 and 1807, and proved perfectly successful. A slight sketch was then given of the origin of the lake of Haarlem, the causes of its extension, and the works already executed in anticipation of its eventual drainage. The third part of the paper gave all the details of execution of the works; many of them differing greatly from the English methods of construction, possessed much interest, and will be found very valuable for comparison. A description is then given of the canal of Oegstgeest, which is a prolongation of that of Katwyk. The author next made some general remarks upon the beneficial effects of the canal, and upon the excellence of the construction, as demonstrated by the advantages afforded by it to the drainage of the district,

and the manner in which the works have resisted, for thirty-five years, the buffeting of the waves of the North Sea without accident. The author has done great service to the profession, by so ably describing these successful works of his father, who was only prevented by an early death from attaining to the highest rank in the profession which he was so eminently qualified to adorn. It appeared that the list of subjects for Telford and Walker premiums issued by the institution induced Mr. Conrad, in spite of his constant occupation on the Amsterdam Railway, of which he is engineer, to draw up the memoir, which is one of the most interesting that has been before the meetings during the session.

Mr. Adie's "Description of the bridges on the Bolton and Preston Railway" contained an interesting account of a peculiar mode of constructing skew-arches, which had been found very successful and economical in practice. It was well illustrated by drawings and models, accompanied by the details of the cost of the erections, which would be very valuable for reference.

A paper by Mr. Charles Hood "On some peculiar changes in the internal structure of iron, independent of and subsequent to the several processes of its manufacture," broached boldly an original view of the causes of fracture of railway-axes, and hence the causes of many serious accidents on railways. It was contended, that any bar of iron, even of the most fibrous and tough character, being subjected when cold to percussive action, would assume a crystallised texture, and eventually break; that this would be materially hastened by the effects of partial heat and magnetism; that the effect of vibration is most sensibly felt in the immediate proximity of the cause of it; that the tough and fibrous character of wrought iron is produced by art, and in all the changes that have been described we see an effort at returning to the natural or crystalline structure common to a large number of metals, and that the rotating of railway-axes renders them peculiarly subject to this influence. The arguments were illustrated by many practical examples, and specimens of iron broken under various circumstances; and the general conclusions arrived at appeared to be, that there is a constant tendency in wrought iron, under certain circumstances, to return to the crystallised state; that the crystallisation is not necessarily dependent upon time for its development, but is determined by other circumstances, of which the principle is undoubtedly vibration; that heat, although it assists, is not essential to it; but that magnetism, whether induced by percussion or otherwise, is an essential accompaniment of the phenomena attending this change. Many other considerations were adduced—such as, the rigidity of the carriages, the looseness of the axles in their brasses, &c.; and in the discussion which ensued, the question as to the amount of change in texture which was produced during the process of manufacture by hammering was fully debated, and a material improvement in railway-axes, by making them hollow in two rolled skeleps, and welding them along the sides in swages at one heat, under the patent by Mr. York, was described and exhibited to the meeting.*

June 28.—The president in the chair. "An account of the bridge over the Thames at Kingston, Surrey," by Mr. Birch, gave a clear, concise history of the construction of a con-

* See the same subject discussed in the Section of Mechanical Science at the British Association, No. 1328, page 459.

venient and useful bridge, which, by the reports of Mr. Telford, appeared to be a good design by Mr. Lapidus, well executed, and with the rare merit of being built within the estimated cost. The drawings to illustrate the paper were remarkably good.

The paper "On a self-acting signal for railways," by Mr. Charles Berwick Curtis, was a description of an useful invention for preventing collisions between railway-trains. The signal has been in action upon the Great Western and the London and Birmingham lines, and is stated to have answered perfectly. The machinery appeared simple, the signal very evident; and its use would permit the policemen to extend their sphere of inspection upon the line, without confining them to one spot, as at present;—all these points are very desirable of attainment.

The paper by Mr. Davison, describing "the well at Messrs. Trueman, Hanbury, and Co.'s brewery," which was sunk by Mr. Clark of Tottenham, under the author's directions, for obtaining a supply of water from the chalk,—gave the details of a bold attempt to form an entire cylinder of cast-iron from the surface down to the chalk—a depth of nearly 200 feet—in order that the several kinds of springs might be admitted at the various levels. The work was commenced in a large land-spring well, 16 feet diameter; and when the influx of water and sand prevented the men from sinking by hand, the process of "misering" was resorted to, and the work was carried on under water, the cylinders sinking as the well was excavated. Several casualties occurred, which were met with skill and success; and the result has been, that although a less copious supply of water has been obtained than at the well at Messrs. Reid's brewery, which was described a short time since by Mr. Braithwaite, yet in the two years which have elapsed since its completion, it yields a good constant supply, and there is not any symptom of sand entering the shaft.

The "Description of the Calder viaduct on the Wishaw and Coltness Railway," by Mr. Macneill, gave, in addition to the details of construction of the wooden trussed frames of the arches of the viaduct, a very extensive series of experiments upon the deflection of the beams, which will form an extremely valuable work for reference as a guide in similar works. The work was curious from being constructed upon an economical scale to suit a limited traffic, but with every facility for widening the viaduct without interfering with the passage of the trains when the increased trade should render it necessary. The drawings by Mr. G. Ellis, illustrating the paper, were well executed, and were much in detail.

The "Description of the harbour of Port Talbot in Glamorganshire," by Mr. H. R. Palmer, was an interesting account of the effects that may be produced by judiciously directing the operations of nature. The harbour is situated on the eastern shore of Swansea Bay, at the outfall of the river Avon, which is fed by the streams from a mountainous district, and traverses an extensive marsh in its progress to the sea. The manufacture of copper and tin plate in the neighbourhood increased so rapidly as to render improvements in the river necessary: some spirited individuals, with Mr. Vigors at their head, undertook it; and, under the author's direction, a sea-lock 45 feet wide was erected. Several improvements in the course of the river were executed, and a new direct channel for the river to the sea was decided upon. This was effected by cutting a

trench through the marsh land 20 feet wide by 10 feet deep, into which the mountain-torrents were directed, and in their impetuous course they ploughed away the bottom and sides of the restricted channel, until it became large enough to contain the whole body of the river, which is now turned into that track, and a free access formed to a commodious harbour calculated for the wants of the rising port. All the details of this interesting work were given, and they appear to be constructed with skill on the part of the engineer quite commensurate with the boldness of the original idea of using the powers of nature to accomplish a work of art.

This meeting being the last of the session, the monthly ballot took place, when the following noblemen and gentlemen were duly elected:—The Dukes of Wellington and Buccleuch, the Marquis of Northampton, Lords Lyndhurst and Brougham, Sir Robert Peel, the Right Hon. C. Shaw Lefevre (speaker of the House of Commons), Prof. Airy, and Dr. Robinson (of Armagh), as honorary members; W. C. Mylne, as a member; and Messrs. Wilkins and Bennett, as associates.

ZOOLOGICAL SOCIETY.

ACCORDING to the reports of the annual general meeting, the number of fellows and fellows elect amounts to 2727. The income of the past year (1841) amounted to 11,611. 15s. 11d.; expenditure, 10,931. 17s. 5d.: balance in favour, 679. 18s. 6d.

The resolution to preserve the museum, and with it the scientific, *versus* the mere wild-beast-show, part of the society, has been fully confirmed, and a design by Mr. Elmslie provisionally adopted for the building. Towards erecting this in the gardens, 5000*l.* have been recommended out of the permanent fund. The number of visitors during the year has been 132,616.

PARIS LETTER.

Paris, Aug. 13, 1842.

Academy of Sciences: sitting of August 8.— M. Duvernoy read a memoir on the composition and internal structure of the teeth of shrew-mice, their relation to the jaw, their development, and their succession.

M. Dumas submitted some specimens of chalky rubble and sand agglutinated by the simple effect of pressure with a heavy roller. A memoir on the improved roller for roads, by M. Schattenmann, was read last sitting.

M. Piobert presented an autograph copy of a work, being the theoretical part of a course on artillery, from the School of Engineers, &c. at Metz; and M. Serres the first vol., entitled *Principes d'Organogénie*, of a work to be named "Précis d'Anatomie transcendentale appliquée à la Physiologie." The contents of the volume are the rules which the organisms of man and animals follow in the course of their development.

M. Arago announced that he had received a great number of communications relative to the eclipse of the sun on the 8th of July last. They were not yet complete; and he should therefore reserve his report. This, however, he would state, cosmic science appeared to have derived great advantage from certain phenomena of light which the eclipse presented: still, they may prove to be only simple optical effects.

M. Arago then took occasion to correct a remark of M. Bessel, that no one had yet measured the prismatic spectra which the stars near the horizon often present. M. Arago had himself been engaged with these measurements for nearly thirty years.

M. Wartmann wrote to describe two phenomena of rain, the sky being perfectly clear and the air calm, at Geneva, on the 11th of last May, at 10^h 30^m A.M. and 3 P.M. During the first, the barometer reduced to 0° marked 730° 5'; the centigrade thermometer in the open air + 9° 3'; and the hair-hygrometer 70%. The rain fell in a direction perfectly vertical; the drops were large and warm, and proceeded from a very elevated region. The fall lasted five minutes without ceasing. The second, at 3 P.M., afforded some remarkable intermissions. After a heavy and sudden shower for three quarters of a minute, the phenomenon ceased for half a minute, then recommenced suddenly with as much force as the first, and lasted a minute; it was again suspended for 50", when again a new fall occurred of very large and very compact drops, having a slight electrical odour, analogous to that which M. Schönbein terms ozone. This latter fall lasted two minutes. The air during the phenomenon was perfectly calm; the barometer 727° 61; the thermometer in the open air + 13° 0'; and the hygrometer 67%.

M. Fournet addressed a note on certain forms of lightning.

M. Agassiz wrote from the glacier of the Aar, bearing date 17th July, that he was again established on the glacier, and had been there eight days with persons to aid him in the observation of the phenomena. They had already made many observations, and the first result is the progressive advancement of the glacier, which has moved 207 feet (Swiss measure) since the month of September last. Fourteen years' observations (from 1827 to 1836 by M. Hugi, and from 1836 to 1842 by M. Agassiz) give for the mean annual movement of the glacier 220 feet. M. Agassiz has established, that in the winter the glacier is immovable. Another curious fact, and little known, is the ablation of the surface of the glacier. M. Agassiz has determined that during the summer the surface is lowered from 6 to 7 feet without the absolute level of the glacier being diminished. He has remarked, in 1841, that notwithstanding an ablation of 7 feet of ice, the level of the surface of the ice was considerably elevated. M. Agassiz attributes this phenomenon to the freezing of the water which is continually infiltrating into the mass of the glacier, and which dilates it in all directions. Measurements have been made to prove that such is the cause. If conclusion may be drawn from three years' observation, the annual ablation is 5 feet.

M. Matteuci addressed a note on some experiments which he has made on phosphorescence, with a paper which he terms phosphorescopic, and which is prepared by spreading uniformly with a sieve phosphorescent matter on paper moistened with gum arabic. This paper is very sensible to the light of the sun, to that of the spark, and of different flames.

Galvanoplastic: Precipitation of Bronze.—M. de Ruol announces that he has succeeded in working alloys by galvanic precipitation, which, it is considered, has not before been done. The several conditions necessary for the simultaneous precipitation of two metals, were given.

LITERARY AND LEARNED.

UNIVERSITY INTELLIGENCE.

OXFORD, June 25.—The following subjects are proposed for the Chancellor's prizes for the ensuing year. *Viz.* *For Latin Verse*—"Venerie."

* Prof. Steinheil, of Munich, has also effected this—*the precipitation of gold and copper from the cyanides*, mentioned in *Lit. Gaz.* No. 1330, p. 494. Mr. Fox Talbot's communication to Section A., British Association.—*Ed. L. G.*

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